IN THE CLAIMS:

Please amend the claims as follows. The claims are in the format as required by 35 C.F.R. § 1.121.

1-6. Cancelled

7. (New) A radio-frequency (RF) apparatus, comprising:

transmitter code circuitry configured to supply a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component; and

transmitter circuitry operable to multiply a pulse signal with each of the set of code sequence elements to generate an impulse train.

8. (New) The apparatus of claim 7, wherein the set of code sequence elements comprises a Barker sequence.

9. (New) A method of transmitting using a radio-frequency (RF) apparatus, comprising:

generating a pulse signal;

generating an impulse train from the pulse signal, wherein generating the impulse train comprises convoluting the pulse signal with a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component; and

transmitting the impulse train.

10. (New) The method of claim 9, wherein the set of code sequence elements comprises a Barker sequence.

11. (New) A radio-frequency (RF) apparatus, comprising:

receiver code circuitry configured to supply a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component; and

receiver circuitry operable to multiply a template signal with each of the set of code sequence elements to generate a receiving template signal and correlate the receiving template signal with a pulse signal .

12. (New) The apparatus of claim 11, wherein the set of code sequence elements comprises a Barker sequence.

13. (New) A method of receiving using a radio-frequency (RF) apparatus, comprising:

generating a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component; and

correlating the receiving template signal with a received pulse signal.

14. (New) The method of claim 13, further comprising decoding a detected signal, wherein the detected signal is produced by correlating the receiving template signal with the received pulse signal.

15. (New) The method of claim 14, wherein the set of code sequence elements is a replica of a code sequence used to produce the received pulse signal.

16. (New) The method of claim 15, wherein the set of code sequence elements comprises a Barker sequence.

17. (New) A method of transmitting using a radio-frequency (RF) apparatus, comprising:

generating a first pulse signal;

generating an impulse train from the pulse signal, wherein generating the impulse train comprises convoluting the first pulse signal with a first set of code sequence elements, each of the first set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

transmitting the impulse train;

receiving a composite signal, wherein the composite signal comprises the impulse train and at least one multipath signal;

generating a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a second set of code sequence elements, each of the second set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

correlating the receiving template signal with the composite signal to produce a detected signal; and

decoding the detected signal.